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ABSTRACT

This paper describes a case study of the use of cases in teacher education, comparing the responses of three prospective teachers to three cases of teaching. In an introduction to teaching course, the teacher educator used the three cases to provide alternative images of practice, hoping to influence the students' beliefs about teaching and about learning to teach. The students analyzed three videotapes, each of which was paired with a single article and presented as response to a central question about teaching. The findings were based on: interviews with the students at the beginning and end of the course; an essay on teaching which the students were required to write, and analysis of four written conversations assigned in the course. Students' entering beliefs about teaching remained central in their interpretations of the cases throughout the term, although each prospective teacher learned new ideas about teaching that were compatible with her initial beliefs. Implications are discussed for the use of cases in teacher education for purposes of challenging and extending prospective teachers beliefs. (Contains 32 references.) (ND)

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Abstract

This paper describes three prospective teachers` responses to three cases used in an introductory teacher education course designed to challenge their entering beliefs about teaching. Students` entering beliefs about teaching remained central in their interpretations of the cases throughout the term, although each prospective teacher learned new ideas about teaching that were compatible with her initial beliefs. Implications are discussed for the the use of cases in teacher education for purposes of challenging and extending prospective teachers` beliefs.

How Three Prospective Teachers Construed Three Cases of Teaching[1]

Linda M. Anderson and Tom Bird

A lively topic of professional conversation among teacher educators recently has been the use of cases (Doyle, 1990; Harrington & Garrison, 1992; Kagan, 1993; J. Shulman, 1992; Sykes & Bird, 1992; Wasserman, 1994.). Proponents of cases argue that they can be employed for many purposes including illustration of theoretical principles, providing precedents for practices, posing moral or ethical dilemmas, modeling "thinking like a teacher," and providing alternative images of practice, but there is little evidence showing that case-based approaches to teacher education work better than alternative pedagogies (L. Shulman, 1992). There are few studies even describing what and how teachers learn from cases (Sykes & Bird, 1992).

The study reported here is a case study of the use of cases in a teacher education course, comparing the responses of three prospective teachers to three cases of teaching. The teacher educator used the three cases to provide alternative images of practice, hoping to influence his students' beliefs about teaching and about learning to teach. Like many other teacher educators, he wanted to help his students explore, expand, and elaborate the personal beliefs on which they will base their professional development, their teaching practice, and their self-evaluations.

Linda M. Anderson is an Associate Professor of Teacher Education at Michigan State University and a Senior Researcher with the National Center for Research on Teacher Learning.

Tom Bird is an Assistant Professor in Teacher Education at Michigan State University and has also been a Senior Researcher with the NCRTL.

An underlying assumption of this study was that individual students will mediate any instruction in light of their own entering beliefs and knowledge. Just as research on K-12 teaching and learning was advanced by attention to students' mediating processes (L. Shulman, 1986), the study reported here assumes that research on teacher learning must also attend to the ways that different students make sense of the content and instruction they encounter in teacher education. Therefore, we asked whether and how the entering beliefs of prospective teachers were reflected in their interpretations of the cases. We were also interested in whether beliefs about teaching changed over the term as a result of working with the cases.

Teacher education as transformation of beliefs. By the term "beliefs", we refer to an aspect of teachers' knowledge that has been given many labels: perspectives, personal theories, frames of reference, conceptions, world images, schemata, constructs, and images (e.g., see Calderhead, 1991; Calderhead & Robson, 1991; Carter, 1990; Clark & Peterson, 1986; Johnston, 1992; Kagan, 1992; Peterson & Comeaux, 1987; Wubbels, 1992). Beliefs include the frames of reference or the perspectives that teachers use to make sense of their practice and its effects on their students. They tend to define the range of phenomena to which teachers attend by making some explanations and interpretations (but not others) readily available, thus rendering reasonable some alternative actions (but not others).

Prospective teachers' own past experiences as learners and students tend to shape beliefs that pose challenges in many teacher education courses (Holt-Reynolds, 1992; Lortie, 1975; Pajares, 1993; Zeichner & Gore, 1990). Some prospective teachers' images of teaching and learning reflect conventional educational experiences,

where teachers tell and knowledge is received and reproduced. When their teacher educators offer alternative points of view, such as the idea that teachers mediate and assist students' active constructions of meaning and transformation of knowledge, these less familiar ideas and images are not easily or quickly understood or accepted. Like any learners, prospective teachers can learn only by drawing upon their own beliefs and prior experiences to understand new ideas, but their beliefs and knowledge may not support their learning about new views of learning and teaching advocated by many teacher educators.

Prospective teachers (and their instructors) thus are caught in a bind. The teacher educator in this study, Tom Bird, recognized this bind and designed his course to respond to it. Because he knew that students' school experiences were powerful, he expected that new beliefs would only result from novel experiences that triggered examination of past beliefs and assumptions. He hoped that cases of alternative approaches to teaching would be vivid and credible enough to promote examination of those beliefs. Because he knew that simply exposing his students to vivid cases would be insufficient to stimulate examination of beliefs, he organized the course and designed assignments to trigger students' examination of their own beliefs in relation to other arguments suggested by the cases and associated readings.

The Introduction to Teaching Course

The general form of the course, which was required of all prospective elementary teachers in the university, is described in Feiman-Nemser and Featherstone (1992). Each section of the course varied, depending on the instructor. Elsewhere, we have described the instructor's course goals this way:

> Bird expected many students to hold, and he wanted to challenge, the image of a classroom in which the teacher is the constant and prominent center of students' attention, where teaching and learning are mainly or exclusively matters of telling and remembering, and where worthwhile learning occurs only at the teacher's insistence and direction. . . . He wanted to introduce the possibility that subject matters might hold some interest for students, that a class might be a place where students are focused on their projects involving the subject matter, and that a teacher might do good work by organizing, guiding, and supporting such activity.
>
> In regard to learning to teach, he expected many students to hold the idea, which he wanted to challenge, that they have seen the relevant range of approaches to teaching and that they are, by virtue of their experience as students, prepared to decide now how they want to teach or what they should be like as teachers. (Bird, Anderson, Sullivan, & Swidler, 1993, p. 257)

The instructor hoped to accomplish these goals by engaging the students with analyses of three videotaped cases, each of which was paired with a single article and presented as response to a central question about teaching. (See Table 1 for a summary of each case, reading, and the central question; the content of each case is further explained when results are reported.) He did not expect that the cases would dramatically change the students' beliefs about what was "good teaching," given the short (ten-week) duration of the course, but rather he hoped that his students would come to recognize several alternative visions of teaching that are worth learning about as options, and to recognize that some of those alternatives are based on unfamiliar ways of looking at classrooms, learners, and learning.

Distinctions among the cases. Bird hoped that the prospective teachers would be able to see and appreciate how the cases differed. The Kellerman case presented a model that Bird expected to be familiar to the students, while the Stein and Lampert cases presented alternative visions of teaching based on alternative assumptions about how students learn and what is worthwhile knowledge.

One way that the cases might be contrasted was the social organization of classroom lessons. In the Stein and Lampert cases, the teacher created social organizations in which the students relied on one another, and the teacher was not the sole authority for knowledge or for determining the course of classroom activities. In contrast, the Kellerman case presented a classroom organized to communicate and support the teacher's decisions about curriculum and criteria for correctness. Thus, the three cases differed in their portrayal of teachers as authorities and the ways that students participated in classroom life.

When the accompanying readings were considered, the instructor hoped that the students would see another contrast. In the readings that accompanied the Stein and Lampert cases, one important idea (to

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TABLE 1: SUMMARY OF CASES AND READINGS

Case	Central Question	Description of the Case	Text Abstract	Sample Discussion Topic
1 (Kellerman)	How should a teacher conduct a class?	A videotape showed a teacher conducting a lesson on writing complex sentences, by direct instruction tactics including a mental set activity, announcement of objectives for the day, review of previous lessons, demonstration/discussion of editing a complex sentence to improve its "style," and guided practice.	(Rosenshine & Stevens, 1986) Since human beings have limited information processing capacity, "well-structured" subject matter may be taught effectively in "step-by-step" instruction following a model sequence of "teaching functions" including daily review, orderly presentations including demonstrations and models, guided practice with checks for understanding, corrective and feedback, and independent practice.	Is "adding style to complex sentences" a "well-structured" topic to which the recommendations in the text apply?
2 (Stein)	What sorts of relationships with students should teachers want, and how do they establish those relationships?	A videotape documented events over several weeks in an open classroom where, within a common theme of study (ancient Egypt), individual students or small groups of students typically chose their own activities from an array of options, organized by the teacher, that included reading, writing newspapers and journals, constructing mathematical games, working with blocks, story-telling and writing, and re-enactment or simulation of Egyptian life.	(Hawkins, 1974) Since persons do not amount to much when separated from their own involvements in the world, teachers should offer students a rich environment of things to become involved with as well as considerable freedom of choice in those involvements. By thus engaging students in their own projects, teachers can learn enough about them to teach them and can form substantial, educative relationships with them around common interests.	Do students have "their own involvements" in schools as commonly conducted?
3 (Lampert)	Supposing that teachers understand something well enough to teach it, how do they help students to understand it, too?	A videotape showed a whole-class discussion in which the teacher invited students to interpret graphs of temperature and depth. With questions and guidance from the teacher, students offered, explained, and defended their conjectures about the meaning of the graphs. While the teacher regulated many aspects of the discourse, including norms for civil disagreements, she gave students great latitude to express their thoughts about the graphs.	(Lampert, 1985) To use mathematics, children must both compute and understand what they are doing; teacher and book are not sufficient to provide this understanding. Children can gain such skill and understanding when they are engaged with realistic mathematical problems taken in their contexts, which supply information that the students can use to reason mathematically for themselves.	Why does the teacher let the students struggle with the graphs; why doesn't she step in and explain as soon as they start having problems?

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be highlighted by the instructor through class discussions) was that subject matter is learned through social interactions that allow students to construct personal meaning. Hawkins (1974), whose essay was paired with the Stein case, argued that teacher-student relationships do not exist apart from the experiences and ideas of the world that are encountered in school. Lampert (1985) argued that teaching well requires an appreciation for the uses of disciplinary knowledge in the world. In contrast, Rosenshine and Stevens (1986), whose literature review was paired with the Kellerman case, portrayed subject matter learning (at least for "well-structured" subject matter) as resulting mostly from teacher presentations and teacher-directed assignments. Thus, the three articles could be read as supporting different treatments of subject matter and its role in teaching, in particular whether the teacher played a direct role or a mediating, facilitative role during lessons.

Class activities about the cases. Each case was the focus of about five two-hour class meetings in which students participated in a variety of small and large group activities. In the course of these discussions, Bird raised the two themes described above (i.e., social organization and subject matter learning), but students also initiated discussion about other themes, such as how the pupils in the classes might have felt and whether or not the different approaches to teaching were "realistic."

Conversations about the cases. Each segment ended with students writing a "conversation" about the case using three voices: Myself as Inexperienced Teacher, Myself as Experienced Student, and Myself as the Author of the text for the case. Bird adopted this conversational form of writing because he agreed with Holt-Reynolds (1991) that prospective teachers were already engaged in a dialogue with themselves as students and as beginning teachers. He hoped that writing the conversations would help prospective teachers to distinguish between their past experience and beliefs as students and their emerging experience and beliefs as teachers; to study the texts closely enough that they could use text-based ideas to talk about the cases; to allow students to make their own arguments at the same time that they learned the authors' arguments; and to set up direct comparisons between the their own prior ideas and the ideas offered in the texts.

Methods

Participants in the study. The instructor was on the faculty of a midwestern public university. His doctorate is in Curriculum and Teaching. He had taught the course described here four times before the term of the study. He was a member of the research team and participated in ongoing discussions about methodology and data analysis. However, in order to protect students, the instructor did not know what students said to the researchers until after grades were submitted. In addition to the instructor, the researchers included another faculty member in teacher education (Anderson) and two doctoral students in education. These other three members did not participate in teaching the course nor did they interact with students except for data collection.

Most of the 31 students in the class were young (around 20 years old), white females from suburban and rural Midwestern communities. Eight of these students either volunteered or were recruited for interviewing. In this paper, we describe three students' responses to the cases. The three were selected because of the range they represented. Because we wanted to illustrate ways that initial beliefs can interact with course or case content, we sought students in our sample who contrasted to one another. We make no claims that they were representative of the larger sample or of teacher education students in general.

Data sources. Three data sources were used for this study. First, an interview was conducted by one of the researchers at the beginning and ending of the term. With the exception of the last question, the interview did not directly address the content of the course. Instead, prospective teachers were asked to talk about their images and ideals as teachers, their rationales for these images, and their analyses of various vignettes or statements about teaching.

Second, we examined an essay about teaching that students were required to write early in the course, but was not graded. In these essays some students wrote about why they had decided to become teachers, others wrote about teachers they remembered, and still others wrote about their images of the ideal teacher.

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Third, we analyzed four written conversations assigned in the course: one each on the Kellerman, Stein, and Lampert cases, and one at the end of the course in which the students revisited and reconsidered the Kellerman case in relation to the other two cases and all of the articles read during the term.

Data analysis. All data analysis occurred after the term ended, so that students' grades were not affected by the results. The *beginning-of-the-term interview* and the *essay about teaching* were read by at least two researchers who used an analytic scheme of 18 questions about teaching (See Appendix 1). Each reader independently identified segments of the interview and essay that could contribute to a summary of the prospective teacher's beliefs about each question. For example, any statement that implied or stated a desirable personal quality of a teacher was coded as relevant to Question 1: "What should a teacher be like, or what characteristics should a teacher have?" Any statement that implied or stated something about recommended instructional practices was coded as relevant to Question 10: "How can a teacher help students gain sufficient knowledge of subject matter?" The four researchers developed the scheme and a coding manual and analyzed some interviews as a group before working in pairs.

Initial agreement within pairs was high; discrepancies usually resulted in an agreement to consider more rather than less data for a given question. Then, the researcher who was most familiar with each prospective teacher's data wrote a set of assertions about her beliefs, using the available data to justify those assertions and to seek disconfirming evidence. These initial assertions were then read by the other member of the pair, who suggested modifications or questioned interpretations. The original writer revised the document and, eventually, simplified the data reporting by reorganizing the 18 sets of assertions into a smaller number of themes that characterized each prospective teachers' beliefs about (1) how pupils learn in schools and how teachers aid pupils' learning, and (2) how she expected to learn to teach.

The *written conversations* were analyzed by the researcher who had also written about the prospective teacher's beliefs. Most attention was paid to the Inexperienced Teacher and Experienced Student voices, which were assumed to represent the prospective teacher's ideas more than the Author voice. The conversations were read, first, to determine what the prospective teacher noticed and how she evaluated each teaching case, and, second, to determine the extent to which her rationales and arguments about the case reflected the initial beliefs about teaching that were identified in the interview and essay. The researcher wrote an analysis of each conversation that asserted whether and how the prospective teacher's beliefs were reflected in the conversation. These analyses were read by a second researcher who suggested revisions.

The *end-of-term interviews* were read using the same procedures and analytic questions as for the initial interviews. End-of-term interviews were also examined for ideas and language from the course, the cases, and the articles.

Students' Initial Beliefs

In this section, summaries are provided of the three students' beginning-of-the-term beliefs inferred from the initial interviews and the essay about teaching. As noted above, the initial analyses produced 18 different assertions; here, we have organized those assertions into two clusters: Beliefs about teaching and learning, and beliefs about learning to teach.

Each summary concludes with commentary by the teacher educator about what he might want the particular student to gain from work with these three cases. While this commentary was written after the course was completed (since the instructor did not have access to the interview data during the term), and therefore is not data per se, we offer it because it represents the kind of reasoning that teacher educators might be able to do if they have access to data about their students' entering beliefs and images of teaching. (We will return to this point in the closing discussion.) The commentary also serves as an advance organizer for reading results in the next section where each student's responses to each case will be described, revealing ways that students' initial beliefs were reflected in their interpretations of the cases, often preventing the student from noticing and appreciating the points of the case that the instructor might have wished her to see.

Kay: Teacher Leadership Creates Student Participation which Causes Learning

Kay intended to teach middle school mathematics in urban schools, and spoke of her social commitment to "give back to the community" to help students who are subject to the "social ills" of their environment. Consistent themes in Kay's initial interview were the importance of student participation in lessons and how teachers promote participation through active, attentive leadership of the class.

Beliefs about teaching and learning. Kay portrayed teachers as active, visible leaders of lessons, implying that if the teacher did not orchestrate lessons well, providing the necessary information and impetus for student participation, then no learning would result. For example, when asked to describe herself as a teacher in an imagined lesson, she described someone who was actively in charge and demanding participation from all students:

> (Y)ou have to go on and see who is participating and who is not. . . . I think that's very important to make sure that you not question just the people who you know are your favorite students . . . but you question everyone. Even that little boy in the back has to be called on to make sure that he knows what's going on.
>
> I like to walk around, try to keep the momentum of the class going. . . . I see myself walking down the aisles and going to the groups and sitting down next to the students making sure they're learning it and questioning them or asking them why did you just do those steps? Can you explain to me why you did that? . . . I see myself as a very moving person.

Elsewhere, Kay's emphasis on teachers' leadership through presentations, monitoring, and feedback implied that the content to be learned should be transmitted from the teacher to the student, and that would only occur when the teacher works actively to get all the students engaged with the work. When she spoke about participation, she said nothing that implied that she thought that students must make sense of the mathematics for themselves. She did not expect any difficulty in assessing students' participation, and implied that her primary criterion would be that students were talking about the task or content designated by the teacher. She did not indicate that she would attend to the content of that talk.

Beliefs about learning to teach. Kay did not reveal any uncertainty about the kind of teacher she wanted to become, and seemed confident that her future coursework and experiences would help her achieve her goals. Kay's midterm writing portrayed teaching in personal, moral terms. She was very clear about teachers' moral obligations to be fair and unbiased, and apparently did not anticipate problems with choices among competing values. Kay distinguished between her own knowledge of math and knowing how to teach it, saying she needed to learn more about the latter, and expected to do so in future education courses. Thus, she was quite open to learning from her teacher education courses but seemed to expect few if any surprises about what she would learn.

Commentary: What might Kay learn from the cases? Kay's entering beliefs seemed congruent with a traditional, teacher-centered form of instruction, but one that recognized the importance of students' active processing of instruction. An admirable aspect of Kay's beliefs was her profound sense of responsibility and proactive stance toward students who might have or pose problems in the classroom.

In her focus on student participation, Kay revealed a more sophisticated view of teaching than is sometimes expressed by prospective teachers who see teachers as dominant forces in classrooms, producing learning and motivation by the sheer creativity of their lessons. In contrast to many of her peers, Kay recognized that teachers are effective only to the extent that they influence how their students participate in lessons.

Given her focus on student participation and engagement, Kay might have been expected to be open to the more constructivist views of learning that were presented in the second and third cases. However, one might also have predicted that Kay would initially reject the teacher roles enacted in these cases because their leadership of the class was indirect and therefore less obvious on first viewing.

The instructor could hope for Kay that she would use the cases to begin to disentangle two parts of her initial beliefs: her emphasis on student participation and her emphasis on teacher leadership. To Kay, the two seemed inextricably bound to an image of teaching as direct instruction. The cases might help her to see that student participation

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could take many forms, and could be supported by indirect teacher leadership. An important step for Kay would be to enlarge her conceptions both of student participation and of teacher leadership, and to see that some rich forms of participation result only when the teacher's leadership is less visibly central and directing.

Jessica: Teachers' Indirect Guidance Helps Students Think for Themselves, which is a Worthy Goal in and of Itself

Jessica intended to teach preschool or primary grades in a suburban, middle-class setting. She consistently conveyed her ideal that teachers should be nondirective in order to foster individual students' capacities to "think for themselves" and learn to communicate. She recognized that teachers needed to manage the classroom and get students' attention when necessary, but she valued teachers' less directive roles more.

Beliefs about teaching and learning. Jessica stated that learners must be mentally involved in learning activities "where they discover for themselves versus somebody telling them. . . . The things you learn the best are the things you discover yourself." Teachers could support such learning by asking guiding questions without expecting one correct answer and encouraging students to explain their thinking. In her image, teachers should be careful not to tell students too much or imply that students' thinking was not correct. For example, when asked to describe herself as a teacher in an imagined lesson, she described a classification task, saying

> I would try not to make them follow my patterns. I would present it in a way that was open to try and make them think for themselves. Explain this to me. Can you explain that picture to me? I would try to direct more to them, to being centered on them versus saying that "I think that doesn't belong there. The blue one goes here, that's what's right."

Jessica did not present an explicit theory about how thinking and explaining lead to new knowledge and understanding. She emphasized the importance of students "explaining things," but her way of talking about this implied that students were telling finished ideas, rather than engaging in dialogue about thinking in progress. Since she also talked several times about the importance of children learning to communicate, she may have seen "explaining things" as important practice in articulating one's ideas, but not necessarily a way to construct new knowledge, which is one purpose for classroom dialogue of the sort illustrated in the second and third cases used in this course.

Beliefs about learning to teach. While Jessica said there was no single best way to teach, she also implied that with time and experience, she would have a better sense of "what works" with different situations and students. She used the phrases "what works" and "what works best" on several occasions. The only aspect of teaching that she felt would be especially challenging was learning to communicate with younger children, since it is hard to understand what and how they think. Like Kay, she expressed no uncertainty about the kind of teacher she wanted to become, and felt confident that she would learn how to enact her image as she completed her coursework and gained more experience in the classroom.

Commentary: What might Jessica learn from the cases? Jessica treated student mental processes as important phenomena, and believed that teachers' actions and statements can influence what goes on in students' minds. In this regard, she was more sophisticated than some beginning prospective teachers who leave the students' minds out of their images and explanations of teaching. Given this focus, it might be predicted that Jessica would be receptive to the constructivist views of learning that underlay the second and third cases, or, at least, that she would find it sensible to wonder about how the teaching depicted in the cases affected students' thinking.

Jessica might also find the teachers in the second and third cases to be more appealing than the first case because they appear to be less directive and more open to student ideas. However, their emphasis on students' learning about important content might not seem to Jessica to reflect her own image, which was nearly free of content considerations. Jessica's image of teaching and learning did not suggest that she had particular content learning goals in mind, nor did she suggest that she might need to think about such goals.

The instructor's goals for Jessica, then, might be to extend her ideas about the importance of student thinking to include content, and therefore to talk more precisely about what counted as "thinking for themselves." Similarly, it could be

hoped that the cases would help Jessica see that teachers could let students think for themselves while still pursuing content learning goals. Given that Jessica intended to teach preschool and that the cases portrayed older children, the cases might have helped Jessica to think about whether and how her images of good teaching differed for older and younger students.

Jill: Teachers should Create Interesting Relevant Experiences to Make School Learning Tolerable and Useful

Jill intended to become an upper elementary teacher. She consistently emphasized the importance of experience and relevance in learning. This theme was evident both in her talk about how she would teach and in her talk about learning to teach.

Beliefs about teaching and learning. Jill portrayed teachers as creators of interesting activities that would camouflage the dullness of content while preparing students for the future. Everything done should seem relevant to future work, even if that future was only promotion to the next school grade. Learning in school resulted from experiences which allowed students to relate the subject matter to the real world. Jill spoke of her own learning in high school in terms of the absence of experiences that would have helped her learn:

> We learned about a lot of things, . . . but we didn't go on a lot of field trips. . . . (I)t would have furthered my understanding and my learning, like in psychology, if we went to . . . the Holocaust center, or things like that. Or, in history, if we went to special productions or plays, at (a historical village) but we never did anything like that . . . I think is important, because I like to really experience what I learn, and a lot of it, I think I just forgot about because I didn't experience a lot of it.

Jill emphasized "hands-on" activities. For example, when she described her image of a history lesson, she mentioned her efforts to keep students "interested and bright-eyed" through a variety of activities that included field trips, skits, oral presentations, library research with old books and newspapers, and special projects linked to holidays and current events.

Jill did not speak much about mental processes and intellectual goals of understanding subject matter. If anything, she took an almost anti-intellectual stance, implying that if one couldn't *do* something actively with what one was learning (besides think about it), then the learning was probably not worthwhile.

Beliefs about learning to teach. Jill worried about balancing the "friend" and "authority" role in teaching and about being patient enough, but she raised few questions about instructional aspects of teaching. She did not expect to find curricular and instructional decisions to be difficult, and implied that someone would eventually tell her what she needed to know about what and how to teach. She said that her other college courses (outside of the College of Education) had not been relevant to her learning to teach.

Commentary: What might Jill learn from the cases? Unlike Kay or Jessica, Jill did not emphasize students' thinking or mental processes and how teachers might influence them; she focused instead on affective responses of interest and enjoyment. She viewed knowledge as being instrumental and closely tied to particular role demands. She expected that she would eventually gain a sense of "what skills are needed for what ages." Her image of teaching was one of creating activities that would involve students in an "experience," and she implied that involvement in this experience would lead to learning of useful knowledge if and only if the activity was enjoyable and interesting enough. She did not imply that she thought about the causal link between experience and thinking or acquisition of knowledge.

The instructor might hope for Jill that the cases could help her appreciate the role of teachers' and students' thinking, and to see that conceptual activity is an important component of learning from "hands-on" or "real-life" experiences. As with Jessica, the instructor might hope that Jill would begin to see that content understanding might be worthwhile and pleasurable, even when it is not directly applicable to a predictable future demand. Finally, the cases might affect Jill's beliefs about learning to teach, and help her see that teaching and learning involve mental as well as physical "hands-on" experience.

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Comparison of Three Prospective Teachers

A teacher educator, like any teacher, must contend with a diversity of prior knowledge and beliefs that lead different students to understand the same instruction in very different ways. In this course, the instructor was faced with at least three very different perspectives on teaching and learning. The three prospective teachers differed in terms of whether they noted and valued student mental processes: Kay and Jessica talked as if student engagement and thinking were phenomena to be noted by teachers, but Jill had little to say about student processes. They also differed in their theories about what teachers did that helped students learn: Kay believed that a direct, "take-charge" teacher who held students accountable would promote learning, while Jessica implied that the most important thing a teacher could do was to listen and ask nondirective questions, while Jill expected that teachers would promote learning by creating enjoyable experiences. To the extent that any of them referred to subject matter issues, they differed in what was emphasized: Kay implied that the teacher's responsibility was to decide what content to teach and then to present it, while Jessica subsumed subject matter learning under a more general "thinking" goal, and Jill expected that much subject matter would be dull unless dressed up by a teacher.

However, all three prospective teachers were similar in one important respect. None expressed doubts about her initial views of teaching. As each looked ahead to her professional education, she expected to learn about those aspects of teaching most central to her own image of the teacher she expected to become. So, although they differed in their images and beliefs, each exhibited a fair degree of confidence in the direction she had set for her learning.

The teacher educator in this course was thus faced with a set of problems. He wanted to induce in his students a willingness to question their beliefs, and then guide them through the process of examining, expanding, and elaborating those beliefs. However, he had a diverse class, with at least three (and probably more) different starting points which suggested different goals for each student's development.

Proponents of cases in teacher education might suggest that they are ideal for such a situation. Cases, by their story-like nature, invite personal responses, which can reveal individual students' beliefs and offer the instructor entry points for helping each student elucidate those beliefs. At the same time, novel images of teaching combined with written rationales might stir the students to reconsider their ideas and to elaborate them.

Students' Responses to the Cases

To learn more about whether and how cases fulfilled their promise in this course, we examined the responses of each student to each of the three cases. The cases did apparently engage the students, judging from observations of class discussions and small group work. However, we also found that in spite of the amount of class time spent in analyzing the cases and articles and in spite of the instructor's efforts to raise new perspectives on the cases, the students' entering beliefs were sturdy and central in their interpretations of the cases.

Responses to the Kellerman Case

The Kellerman tape showed an eighth grade English class taught by direct instruction. The objective for the lesson, which the teacher wrote on the chalkboard and stated aloud, was to teach the students to "put style into their complex sentences." After reviewing the definition and parts of complex sentences, the teacher wrote a student's complex sentence on the board and demonstrated how the sentence might be improved by thoughtful selection of adjectives and verbs. In the course of this demonstration, she asked students to suggest adjectives and verbs, and visibly screened students' suggestions as well as providing her own. The resulting sentence was mostly a product of her suggestions. For guided practice, the teacher then had students write complex sentences and revise them in ways that she had just demonstrated. Throughout the lesson, the teacher maintained a brisk pace organized by frequent, specific instructions and close monitoring, all carried out in an agreeable manner.

The accompanying reading was a chapter about direct instruction (Rosenshine & Stevens, 1986). Since the teacher in the case had received extensive training in direct instruction, the chapter might be read as though it were her explanation of what she was doing, and so could enrich the case. The class read important passages from the chapter together and discussed it extensively with the goal that the students would be able to use its arguments and language to talk about the eighth grade writing lesson. Particularly emphasized (in the article and in class) was the idea that some content is "well-structured" and some is "ill-structured," and different instructional moves may be appropriate for different content goals.

The instructor had several purposes in using the Kellerman case. He expected that the lesson would look familiar to most students and would elicit a generally favorable reaction. It could serve as a point of contrast to later cases which would not be as familiar to the students.

Kay's Responses. Kay responded positively to Kellerman's lesson. In the written conversation, her Teacher and Student voices both lauded the techniques used by Kellerman, explaining that agenda-setting by the teacher is very important so that a student knows what she needs to accomplish and understand—a view that is certainly compatible with Kay's ideas that teachers should focus and maintain students' participation in the lesson.

Kay used the ideas of "well-structured" and "ill-structured" content in her conversation, at first appearing to equate them with "higher-order" and "lower-order" learning, a distinction that she made in her initial interview. Specifically, she wrote in her conversation that the higher-order knowledge of "writing with style," emphasized by the teacher in the case, was built on a "base" that the teacher was providing through her explicit instruction. At one point, it seemed that Kay was setting up a criticism of Kellerman, in that she had just made the case that teaching "style" was something like what Rosenshine called "ill-structured" and therefore not an occasion for the kind of instruction used by Kellerman. However, Kay did not develop this criticism, concluding instead that the lesson was both well- and ill-structured. It appeared as if Kay was interpreting available ideas in ways that allowed her to respond positively to Kellerman's lesson.

The researcher's final assessment was that Kay's interpretation of the case was highly congruent with her entering beliefs about teaching and learning. Teacher leadership in stimulating student participation was a key idea Kay used to make sense of this case.

Jessica's responses. In her conversation on the Kellerman case, Jessica was enthusiastic about the lesson. She praised Kellerman's success with getting students' attention, which was a teaching function she had emphasized in her initial interview as a necessary condition for helping students to think for themselves. She noted Rosenshine's argument about the difference between well- and ill-structured content, recognizing that Kellerman's approach might not work in all situations. Like Kay, she did not develop this argument into a criticism of Kellerman, and instead concluded that she should emulate several aspects of Kellerman's style, such as "stating my objectives, reviewing, demonstrating by examples, asking many questions, guided practice and independent practice."

To the researchers, Kellerman's approach to questioning students seemed to be incongruent with Jessica's earlier image of herself as a teacher who promotes students' "thinking for themselves" through indirect means. Jessica, however, did not raise that potential discrepancy in this conversation. Perhaps she thought it but suppressed it, thinking that the real purpose of the assignment was to talk positively about Kellerman. Perhaps she did not sense the potential discrepancy. Or perhaps her image of preschool teaching was based on a different set of beliefs than were invoked when she watched the case of middle school teaching, and so she faced no real discrepancy.

Thus, her interpretation of the Kellerman case was in some ways congruent with beliefs implied by her earlier statements (getting students' attention is important) but not congruent in other ways (she did not evaluate Kellerman in terms of students thinking for themselves).

Jill's responses. Unlike Kay and Jessica, Jill did not begin the conversation with praise for the teacher. Instead, her ploy throughout the conversation was to use her Teacher voice to criticize Kellerman, and then the voices of the Student and Rosenshine to defend Kellerman's practice. Their first line of defense emphasized improved student

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efficiency when the teacher regularly conducted rapid lessons. Jill's Student voice said that such a pace could help students who were too perfectionist, and that any anxiety felt by students would ebb over time as they increased their pace. Here, as in Jill's initial interview, issues of student affect were more salient than issues of content learning.

The second line of defense involved the use of concrete examples to stimulate writing, although Jill may have misinterpreted Rosenshine's use of "modeling" to refer to concrete objects rather than a method of teaching a procedure or strategy. Within this segment of the conversation, Jill had Rosenshine point out a way that Kellerman was "sneaking" in new content, reminiscent of an argument offered in her first interview that good teachers were "sneaky" about making students learn something without the students being aware that they are learning. For example, she said of Kellerman, "The students do not realize when they view the picture, . . . that they are also expanding their vocabulary for description."

In contrast to Kay's and Jessica's conversations, Jill's conversation sounded contrived, except in places where she recounted her own student experiences, and these were not always clearly tied to other themes in the conversation. In representing the author's voice, Jill sometimes missed points in the article that others found most significant. Unexpectedly, she did not criticize the lesson because it failed to provide real-world writing experiences, a criticism that would have been congruent with Jill's initial interview. It is unclear whether she felt that such a comment was inappropriate for a graded assignment, or whether she simply did not connect that idea with the case.

Responses to the Stein Case

The Stein tape documented an open classroom for second and third graders. In her current unit, the teacher had organized a variety of activities around a theme of "Ancient Egypt;" the unit culminated both in a class visit to the Tutankhamen exhibit when it visited the city and in a funeral, modeled on Egyptian practices, for two pet snakes that had died in the classroom. The classroom had no desks for the teacher or the students; it had tables and other places to work. The documentary showed students scattered or moving about the classroom writing newspaper articles, writing in journals, reading while lying in a hammock or on a rug, making up mathematical games about exploring tombs, making prints, planning the funeral for the snakes, and so on. While the teacher visibly took charge in a couple of scenes to assure herself that students had chosen activities and were working on them, she was more often seen in the background working with one or two students.

The accompanying reading was an essay on relationships among the student, the teacher, and subject matter (Hawkins, 1974). The essay made arguments that could be taken as rationales for the open classroom, for example, that teachers should afford students a choice of involvement with interesting materials and activities in order to gain their genuine involvement in learning. Similarly, Stein's open classroom provided concrete images that could help students understand the essay's argument, for example, what it means to provide an environment that is rich in choices.

As before, the teacher education class worked to master the essay's argument and vocabulary, with the aim of using them to talk about the Stein case. The instructor expected that the Stein case and Hawkins reading would introduce a new image of teaching and classrooms to most students, one in which less direct methods than Kellerman's could lead to both meaningful understanding of content and personal and social growth. He framed class discussions around issues of teacher-student relationships, hoping to help students to see that a subject matter, along with the teacher and student, are necessary parts of good relationships in school. He hoped that students would come to understand that respect and affection for students can be expressed through interactions about a subject matter, and that such interactions help convey to pupils that they are responsible individuals worthy of respect and capable of self-directed learning.

Kay's responses. Given Kay's earlier enthusiasm for the Kellerman case, and her emphasis in her interview that teachers should be in charge, even if the students do not like the demands, one might have predicted that Kay would not like Stein's open classroom. However, Kay's response to this tape was consistently positive, highlighting the close relationship that the teacher had with the students. In class discussions during this segment, Kay pointed out to other students on at least two occasions that

Stein was herself to be credited for the way the classroom ran (i.e., she was a leader of the classroom in Kay's eyes and, therefore, fit into her image of the good teacher.).

Kay not only liked the classroom but desired to emulate Stein, saying, "I want to incorporate Stein's 'control' of the situation and the enthusiasm of her students for learning into my classroom." Here, Kay's emphasis is first on the extent to which the teacher is in charge, congruent with the central theme of teacher leadership that appeared in her first interview. Kay's Student voice added her memory that in her childhood, she had been "confined to a seat (with) limited interaction with the other students," implying that the kind of participation she had experienced was not desirable. Here again, an important theme to Kay—students' participation—is the basis of her evaluation of the case.

At one point, Kay's Student voice posed a potential conflict : What if one had to choose between warmth and discipline? She answered herself that "I would prefer a combination of both, but if I had to choose. . . . it would be a strict teacher." Here Kay affirmed the beliefs expressed in the first interview about the importance of teacher leadership and discipline. While she admired Stein and her classroom, she left herself the opportunity to reject Stein's image in order to maintain her original priorities for strong teacher leadership. After introducing this dilemma, Kay did not explore it further, nor did she raise questions about how Stein had achieved the remarkable balance evident in the tape.

Notably, nothing in the conversation (beyond a brief exchange about African-Americans and history curriculum) took up Hawkins' central argument about the importance of the "it"—the subject matter being studied—in the teacher-student relationship. Instead, Kay interpreted most of the tape in terms of teacher authority and the need to balance that authority with caring and affection. Just as in her original interview, issues of subject matter per se (with the one exception) did not enter into her thinking about what is involved in teaching. Instead, she seemed to be grappling with an issue that was central to her—how to be a leader in order to care for students, especially urban students. She was expanding her thinking about this issue by considering a new option for how a teacher might relate to students and still be a leader. However, she was not considering new ideas about content as a component of the relationship, as the instructor had intended.

Jessica's responses. Jessica's conversation about the Stein case also focused on teacher-student relationships. She found much to praise in Stein's classroom. While Jessica acknowledged that a "classroom rich in concrete materials" was important, she did not refer to the part that subject matter learning might play in sustaining a relationship of mutual respect between teacher and student. Instead, as in her initial interview, it seemed to matter less what was being learned than that learning was occurring because of students' "thinking for (themselves)."

Given Jessica's earlier focus on similar elements in her interview (i.e., teachers should foster students' thinking, and the content of their thoughts is not an issue), her attention to these same elements in the Stein case is not surprising. She was already attuned to ways that teachers might help children "think for themselves" and she saw this as the main idea in this segment of the course.

The instructor had intended that the Hawkins article, paired with the Stein tape, would help prospective teachers think about the subject matter, the third part of a triangle, the "it" about which teachers and students interact. However, Jessica did not mention this idea, beyond her recognition that many concrete materials were necessary to allow exploration and discovery. The Stein case, more than the others, could easily be assimilated into Jessica's initial images and beliefs about teaching, and she did so apparently without complicating her ideas about the role of subject matter in teaching.

Jill's responses. Jill conveyed through all three voices that she found many features of Stein's classroom to be admirable, but her rationales and explanations, offered through Hawkins' voice, suggested that she did not understand some of the most important points made by Hawkins and emphasized in class discussions.

For example, she wrote that respect comes when a student has freedom and feels comfortable, which is in contrast to the article's premise that respect results from students and teachers interacting productively about some subject matter

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held in common. Jill also presented the teacher as the authoritative source of knowledge who confirms and diagnoses students' understanding. For example, she compared one of her elementary school teachers to Stein, interpreting Stein's interactions with students primarily as a means to evaluate students' learning. In contrast, Hawkins' described teacher feedback in less authoritative ways.

As in the Kellerman conversation, it was difficult to identify Jill's voice or trace the reasoning in her interpretation of the case. Instead, much about the conversation appeared to be an unsuccessful effort to paraphrase the ideas of the article. Jill's own commentary at the end conveyed her frustration with the assignment: "This conversation was extremely trying, because I never really understood Hawkins' essay no matter how many times we discussed it in class or how much I read it. I still feel very lost in the essays and the conversations, but I thoroughly enjoy our classroom discussions."

Responses to the Lampert Case

The Lampert tape showed a class of fifth graders engaged in a mathematical discussion. The teacher had shown her students a videotape in which some marine scientists dropped a probe over the side of their vessel and used the data returning from the probe to construct graphs of the water's temperature by depth. The teacher began a discussion by asking students what they could tell from the graphs. Her students began to make arguments about the meaning of the graphs and to give their reasons. The teacher moderated the discussion by repeating and summarizing students' arguments, asking students to comment on each other's arguments, calling attention to differences of opinion among the students, and raising new questions about the graphs' construction and meaning. Early in the forty-five minute math lesson, some pupils began expressing the conventional understanding that the lines in the graphs showed the relationship between the temperature and the depth of the water. Some other pupils stated the unconventional understanding that the graph lines showed the physical path of the probe through the water. It appeared that the latter pupils think of the graphs as maps.

Throughout this activity the math teacher gave her students many indications of how they should act in conversation, but few indications of what they should think or say about the graphs. Near the end of the lesson, she began an attempt to help students sort out their thinking by juxtaposing three representations of the situation when the marine scientists made their graphs. One of these representations was the graphs themselves. The second was a table of ordered pairs of temperature and depth readings, which the teacher asked students to reconstruct by reading from one graph. The third was a diagram, sketched on the chalkboard, which showed the research vessel on the surface of the water and the ocean floor below, connected by a vertical line marked off in ten-fathom segments. Seemingly, the teacher wanted the students to work out, for themselves, that those three representations were both different and related.

The corresponding article was written by the teacher (Lampert, 1985). She argued that, to be able to use mathematics, students must learn not only to perform calculations but also to understand why and when they would perform those calculations. She argued further that students can attain that understanding more surely and readily if they encounter mathematical problems in the context of real-life problems, which provide information they can use to test their mathematical thinking, and if they are encouraged and helped to reason through the mathematics for themselves.

The instructor hoped to use this case to strengthen the idea that teachers must think about content and its representation to students, and arrange interactions with and among students about that content. More specifically, he hoped to help them see how teaching mathematics in context through classroom dialogue about mathematical ideas and problems contrasted to ways that they had been taught math, and might lead to a different way of learning mathematics than many of them had experienced. Much class time during this segment was devoted to working with the mathematical ideas featured in the lesson, and discussing why some students feared mathematics.

Kay's responses. Since Kay intended to become a math teacher, and reported that she found math classes enjoyable, one might have predicted that Kay would find this case intriguing, especially since its image of teaching contrasts in many ways

to the image of a more traditional, direct instruction math lesson that Kay developed in her interview. However, the tone of Kay's response was neutral, both in the written conversation and in her comments during class discussions.

Kay's initial ideas about student participation figured in several places in her Lampert conversation. Kay opened by stating that she wanted to be like this teacher, pointing out that the teacher was clearly the leader in the class even though the students did much of the talking. Kay justified this desire by referring to the high level of student participation, and attributed the positive effects of the teaching to its impact on participation.

Similarly, Kay's Teacher voice noted that she liked the way Lampert "never tells her students you're wrong, which would discourage them from participating, but let the class offer other suggestions." This seemed congruent with Kay's earlier statements about teachers' responsibilities to ensure participation by everyone in the class.

One statement suggested that she might be thinking about student participation in more complex ways than simply talking and being on-task. She said that students were "manipulating their individual interpretations while moving towards a new concept in small steps." However, there was nothing in the rest of the conversation, in Kay's comments recorded in class, or in the final interview to indicate whether she was indeed thinking more deeply about the nature of student participation as a result of this case.

In addition to these positive comments, Kay also pointed out a way in which Lampert diverged from her image of good teaching. The Student voice agreed that Lampert's technique of never telling students they were wrong was a good idea, but then offered the advice that "I think it's important to follow up with that student after the correct answer is generated to briefly explain why he/she is wrong. Just because the right answer is said, doesn't mean the student understands." She goes on to advise that a "simple follow-up" can "allow you, as an educator, to check for understanding." Here, she used language from the earlier direct instruction case, and meshed the instructional principles advocated by the two authors.

This passage suggested that Kay interpreted the Lampert case through her own view of mathematics, which was at odds with premises from which Lampert was operating. To Kay, there was clearly a correct answer, and the purpose of the class discussion was to arrive at that answer, and then make sure that everyone knew it in the end. She saw Lampert as doing a commendable job of running the class discussion in a manner that maintained student participation, with just the one shortcoming of not providing direct feedback of the correct idea. Thus, she interpreted Lampert's teaching within the framework of her entering vision of what a good teacher should do—maintain students' participation and help them learn math. Kay did not grapple with Lampert's more complex portrayal of student involvement as sensemaking rather than reception of and practice of correct procedures. What might have been a case that provoked Kay to dig further into her assumptions about how mathematics is learned was instead assimilated easily into Kay's existing schema. This occurred in spite of the instructor's efforts to engage his students in thinking about what was unusual in Lampert's treatment of mathematics.

Jessica's responses. From the beginning of this segment Jessica seemed to wonder, "What's the big deal?" She felt that there were not many new or significant ideas in the article, and she simplified the author's main argument as "use concrete examples when teaching math."

Jessica's portrayal of mathematics in her interview (as a straightforward, factual subject) was reflected in her written conversation on the Lampert case. Jessica did acknowledge that Lampert's class discussion accomplished Hawkins' goal of "getting students to go on their own" to discover something for themselves. But she saw its validity primarily in the ways that students could see their mistakes and correct them. For Jessica, perhaps, the students were discovering the right answer, but not engaging in the kinds of consensual construction of meaning about which Lampert wrote.

Jessica's interpretation of Lampert's intentions also surfaced in one after-class interview. When asked to tell what was going on in the video, Jessica reported that the teacher in the tape eventually became frustrated with the students ("was ready to pull out her hair") because "she couldn't get the point across" even after "going

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over it for the tenth time." Teacher educators who read the Lampert article or watch the tape probably would not agree that the teacher's goal is to "get the point across" by "going over it" with the students.

Absent from Jessica's commentary on Lampert is any reference to Lampert's untraditional social organization and the ways in which that reflected a view of mathematics and mathematics learning different from Jessica's. In fact, she wrote in her final commentary to the Lampert conversation that this article just had not provided many ideas to write about, compared to the other articles. Thus, her "What's the big deal?" stance remained intact, in spite of the instructor's efforts to introduce new issues into the discussions.

Jill's responses. In this conversation, Jill's Teacher voice said the lesson was "too demanding for the brain capacity of a fifth grade student" and her Student voice agreed that she "had a very challenging time with any kind of arithmetic, let alone algebra and reading graphs!" This response echoes some of Jill's comments regarding mathematics in her initial interview. She expected to have a difficult time teaching math well, because she disliked it so much she didn't know how she would make it interesting.

By the end of the conversation, however, both her Teacher and Student voices agreed that having students work with problems in a real-life context was a good idea. Her rationale was expressed in terms of students having real experiences, echoing the theme in her initial interview. In this excerpt there is also a trace of Jill's belief that good teachers must be sneaky (teaching them something "before they realize it"): "I give the class real life situations in order to apply concepts, and before they realize it, they are using one simple equation in a variety of areas."

With the exception of the exchange about students having "real life" experiences with math, the conversation does not reflect other ideas from the article or class discussion. Perhaps, as suggested with the other two cases, Jill did not grasp the arguments made in the articles or discussions well enough to use them to analyze the case.

Reconsidering the Kellerman Case

During the last three sessions of the term, the instructor replayed the Kellerman tape and had the students consider how each of the authors of course readings might comment on that case. The instructor intended that viewing the tape again would provide an occasion for students to reconsider earlier ideas and demonstrate that they had mastered the ideas of the course well enough to compare and contrast them in thinking about teaching.

Kay's responses. Kay did not indicate awareness that the authors and cases presented very different models of teacher leadership. Instead, she seemed to see all of the viewpoints as easily fitting into her own image of teachers as strong classroom leaders who provided clear presentations and clear feedback, and assured student participation in lessons. Kay implied that she could simply choose among the options presented by the cases, as if selecting from a menu. Any form of leadership seemed reasonable, as long as it led to the outcomes Kay valued most: student participation with the content as presented and evaluated by the teacher. Her conversation revealed that the course had raised some questions for Kay, and the cases had suggested some options for practice, but only about areas already central to her beliefs about teaching.

Jessica's responses. In her second conversation on the Kellerman case, by contrast to the first, Jessica found some things lacking in a straightforward, direct instruction approach. She saw that a style of teaching that she had found praiseworthy when it was first viewed might not support the outcome she had valued since the beginning of the term ("thinking for oneself"). She linked this outcome to a new idea about respect for students. Her Student voice recalled a former teacher who was very directive: "(T)here was no way that she could have truly known our class or what our needs were. She couldn't have respected us either because we never truly had to think for ourselves, only parrot back what she had told us."

Jessica ended the conversation where many of the prospective teachers did, by proclaiming that no single method of teaching is best, and that she would likely combine all ideas. However, she did point out that various methods are differentially effective under different circumstances, especially whether the

content is well-structured or ill-structured. The final conversation suggested that Jessica accomplished some of the instructor's goals for belief transformation during the term. She now recognized some additional options for teaching, and was beginning to realize that decisions about methods must be made according to the circumstances, including the content to be taught.

Jill's responses. Jill had each author comment on Kellerman in turn. While attributing appropriate comments to each author, she did not refer to ideas that had been most emphasized throughout the term, nor did the authors interact with each other much (as the instructor had intended). When each author had concluded, Jill's Student voice made this assertion, which sounded like statements she made in her initial interview:

> (The) best education is one that is experienced. Let your children learn for themselves—give them a slight push to get started, but have them figure out what is really important on their own, or together as a class group. You will be surprised at the feats children accomplish when they put their minds to it.

This comment in the conversation was not linked by Jill to the Kellerman case or to any of the authors. Perhaps Jill did not yet know how to make such links explicit, or perhaps she simply was trying to say what was most important to her regardless of whether it seemed related to the cases and the writing assignment. Jill's final conversation did not convince readers that her beliefs about teaching had undergone any change as a result of her work with the cases.

End of the Term Interviews

After students had turned in their last assignment (but before they received their grades), each student was interviewed again, using the same questions asked in the first interview about their images and ideals as teachers, their rationales for those images, and their analyses of various vignettes or statements about teaching. The last question of the final interview asked them to comment on the course and the conversational writing assignments.

In analyzing these final interviews, we were interested in the extent to which the images of teaching had changed (suggesting possible changes in beliefs) and whether and how ideas, language, and cases from the course were used spontaneously in talking about that image.

Kay's image of teaching was very similar to that portrayed in her first interview in that she described an active, direct instructor. She used several terms from the Rosenshine article to describe her imagined instruction, but did not use ideas from other segments of the course. Thus, the case that seemed most memorable and useful to Kay at the end of the term was the case that was most like her own initial image of teaching.

Jessica's end-of-term image of teaching also was very similar to her initial image in that she described a supportive teacher who encouraged children's efforts to communicate and think but who did not evaluate or tell them how to answer. She used several phrases and ideas from Hawkins' article and the Stein case to justify her image of teaching. Here again, the case that was most like Jessica's initial image of teaching was the case that seemed to have made the strongest impressions and was most available for use in talking about teaching.

Jill ended the course very frustrated with the grades she received on the written conversations. She agreed to talk to researchers only for the portion of the interview in which she could criticize the course. Her primary criticism was that the course had not offered enough "real" teaching experiences, and that she could not think and analyze something about which she had no experience. Her end-of-term assessment of the course reflected her initial beliefs—that the basis for all learning is real-life, "hands-on" experience, and it is the responsibility of an instructor to provide that experience. Like the other two prospective teachers, her end-of-the-term comments reflected the beliefs that had been inferred from the initial interview.

Discussion

The instructor had hoped that students would realize that there was more to learn about teaching than they had imagined, and that there are alternative images of practice to those they held at

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the beginning of the term. For Kay and Jessica (and most others in the class), this goal was realized to some extent. When interviewed, most students (with the exception of Jill) claimed to have learned something from the course about options for teaching that they had not considered before. They talked easily about how they would pick and choose among the options suggested by the three cases, and, indeed, they seemed to work hard to find something positive to say about each case and something to emulate in each teacher. It was as if they approached the study of the cases as an opportunity to fill in the missing details in their existing schemas of teaching, to learn how to do whatever they already imagined they should learn to do. Perhaps they understood "options for teaching" to mean "different techniques that help me act like the teacher I know I want to become." They did not understand "options for teaching" to mean "noticing new aspects of classroom life and raising new questions about what teaching and learning entail."

So, when the students learned about the options offered by the cases, they did not do so by expanding their belief systems for what it is possible to notice, consider, and value in teaching. Rather, they interpreted each case through the lens of their initial images of teaching. So, throughout the term, Kay emphasized ways in which teachers were obvious leaders of the classrooms, spurring pupils to participate actively in lessons. Throughout the term, Jessica emphasized ways that teachers indirectly guided students to think for themselves. Throughout the term, Jill emphasized ways that teachers created interesting experiences that helped pupils feel better about themselves and school.

Because their interpretations were the result of ready, efficient assimilation to a familiar scheme, the possibility of constructing alternative ways to think about teaching may have been foreclosed before students ever seriously considered new ideas. Even in the face of clear opportunities and encouragement to do so, they did not much explore how teachers support students' construction of subject matter knowledge, or how social contexts of teaching and learning define the roles students and teachers play and what and how students learn. Their written conversations and interviews do not suggest that these aspects of teaching became problematic or even interesting for them. Consequently, the Stein and Lampert cases, which were intended to introduce alternative views of teaching that are in line with many current curriculum and teaching reforms, were not viewed as novel or incongruous with past experience, as the instructor expected they would be.

Indeed, these two cases may have served to reinforce students' confidence in their initial beliefs simply because those beliefs worked to interpret the cases and meet the course requirements. These data suggest how learning from cases is subject to the "familiarity pitfall" that Feiman-Nemser and Buchmann (1985) described in learning from field experience: Students will tend to see and hear what they expected. Even when instructors expect that a case will provoke a challenge to beliefs because it will seem unfamiliar, students may well interpret it in a way that renders it familiar, even when that requires ignoring or recasting aspects of the case that would otherwise be anomalous to their own experiences and beliefs. Such a response is quite reasonable from the students' point of view, both in teacher education and in other fields of study (Chinn & Brewer, 1993).

Implications for the Use of Cases in Teacher Education

It is not news that prospective teachers, like other human beings, use their prior experience to make sense of the scene before them. There is research on the record to the effect that (a) prospective teachers' beliefs tend to be stable through teacher education programs (National Center for Research on Teacher Education, 1991) and (b) using their prior beliefs, prospective teachers can construe their teacher education coursework in ways that their instructors did not intend and might object to (Holt-Reynolds, 1992 & 1994).

But these generalizations are not, taken by themselves, very helpful in designing or conducting any particular event in teacher education. Rather, they suggest that teacher educators need "pedagogical content knowledge" (L.Shulman, 1987) in the form of specific ways in which particular student beliefs interact with particular teacher education materials and activities. In planning a course, one may ask the question, "How might a student who holds beliefs like Kay's (or Jessica's or Jill's) interpret the material I have in mind to teach?" From this standpoint, the yield of the

study may lie more in the descriptions of students' responses and in the model of teacher educator inquiry than in any generalizations we might draw from them.

The pragmatic question here is how the instructor might have worked with cases differently so that students are more likely to construct alternative ways for thinking and talking about teaching. Elsewhere, we have discussed the instructor's conduct of the course and some of the central dilemmas he faced, dilemmas that may be inevitable when the goal is to promote the development of belief systems (Bird et al., 1993). Here, we will add some remarks on the use of cases in this course.

Presentation of cases. The instructor in this instance intended to elicit students' personal responses without communicating that a "right answer" was expected; he usually showed a case with only brief introduction including a broad issue to which the case was pertinent. He then asked the students' reactions and promoted class discussion of those reactions, then engaged students in work with the ideas from the related reading. Finally he replayed the case and provided them opportunity, in class discussion and the conversation papers, to adjust their reactions. Thus, he invited the students to commit themselves early and then to change their minds. As a consequence students might have interpreted the information from the related reading in light of their reaction to the case rather than the other way around. They might also have resented the implication, in this sequence of events, that they got the case wrong and needed to correct themselves. Perhaps the instructor's attempt to challenge their ideas came across as a challenge to their "subjective warrant to teach" (Lortie, 1975) and so called for a defense, rather than a reconsideration, of their experience.

The instructor might have approached the viewing or reading of each case by inviting a temporary suspension of judgment and introducing some ideas, metaphors, or images that could help students to construe the case differently and more diversely than they would on their own resources alone. In so doing, he would run the risk of signaling that the students' personal reactions were unimportant, and thereby reduce his chances to discover what students thought. As we work with cases in the future, we will attend more closely to the introduction of cases; we hope to learn ways of striking a balance between valuing students' personal responses and encouraging them to try out new perspectives without losing face or assuming that they have to play the classroom grading game.

Promoting a community of inquiry. The instructor intended his course to socialize students to professional conversation; at the same time, he hoped that exposing important differences of opinion among the students would help to complicate their thinking. Both in whole-class discussions and in extensive groupwork he sought to promote a community of inquiry in his class; students had many opportunities to hear others' ideas and compare them with their own. Students remarked in the final interview that this was a very valuable feature of the course.

However, it is questionable whether this collegial interaction was very inquisitive, whether it served to promote much reconsideration of students' prior ideas. Elsewhere, we have reported how student discussion groups tended to dampen investigation and to seek early agreement, seemingly, to preserve sociable relations (Swidler, Anderson, & Bird, 1992). While the cases used were valuable bases for discussion, the complexities of fostering pointed discussions of competing ideas remained. To the extent that the instructor could promote greater tolerance for differences of opinion, he might help students to accomplish more in small groups.

Mediating individual students' learning. We have wondered whether the instructor might have accomplished more by taking a more clinical approach to his course, that is, by focusing more on the development of individual students over time. While the instructor asked for students' informal writing regularly, and while he solicited students' opinions in class, he generally used this information to figure out how to promote group discussion, as distinct from tracing development in individual students' thinking. While marking and grading students' conversational papers provided him greater opportunity to address students' individually, he was reading each paper in the context of other students' papers on the same assignment, rather than the same students' earlier writing. Moreover, the writing assignments came late in each segment of the course, so that stu-

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dents typically received written feedback on one assignment after the next segment of the course was underway, and there was no systematic provision for a response on their part.

In a more clinical approach, the instructor would have gathered more and better data about students' beliefs early in the course. Then, in reading and evaluating students' work, he would have proceeded cumulatively, responding to each new product in relation to the initial data and the students' earlier work (essentially responding to students' cumulative portfolios). Finally, work in any given segment of the course would be complete only when he had provided feedback to a student's work and the student had responded to his questions and probes. By these means, he might do more to help individual students become aware of their prior beliefs and images, to see how their interpretations of cases and readings drew upon those beliefs, and to see the potential consequences of choosing one interpretation over another.

Such a clinical approach to teaching would be, of course, very time- and energy-consuming, and might well be impossible when classes are too large. It would be more feasible if the instructor could integrate his analytic scheme for making sense of students' initial beliefs with his scheme for responding to and grading their course work. For this study, the researchers found it useful to focus on the two dimensions described earlier—the place of subject matter and how it is learned, and social organization of classrooms as they affect teacher and student roles. If we were to teach the course again with the cases described here, we would expect to use these dimensions more explicitly in teaching about the cases as well as in eliciting and describing students' initial beliefs and in responding to their reactions to the cases. For other courses, teacher educators would need to develop schemes for analyzing their students' evolving beliefs that match the content of their courses and the cases to be used. For example, in content methods courses, the teacher educator might want to consider students' beliefs about the subject matter in light of disciplinary debates and disagreements (s)he hopes to surface by using cases about teaching and learning that subject matter.

Concluding thoughts: Teacher educators' pedagogical content knowledge and the role of studies like this. Teaching with cases for purposes of promoting change in beliefs will be successful only insofar as the teacher educator can help students connect their own ideas to the cases, and then to use both sources to reflect upon the students' evolving beliefs about teaching. As the data from this study suggest, accomplishing this is difficult, even given a promising set of cases and a great deal of thought by the instructor and his colleagues about how and why they should be used.

This study suggests that if teacher educators hope to inquire further into the effects of cases on their students' learning, then we should pay close attention to the interaction between the details of the cases and the details of students' prior beliefs about teaching and learning. Teaching well with cases requires more than a general set of principles for leading discussions about cases; it also requires particular knowledge of the issues that can surface from a given case; the most likely ways that students may perceive and interpret that case or those issues; a set of strategies for continually collecting data about students' interpretations of the particular cases and evolving beliefs; and a set of strategies for continually engaging students in reexamination of their evolving beliefs in light of the cases being used.

Although this study has been specifically about the use of cases in teacher education, we suspect that these conclusions about what is required to teach well with cases also apply to other modes of teacher education that seek to influence prospective teachers' fundamental beliefs and images of teaching. A critical factor is the teacher educator's pedagogical content knowledge about the particulars being taught, answers to questions such as the following: Why are these particular ideas about teaching and learning important and in what circumstances and in what ways might they be used by teachers? What ways of understanding these ideas by prospective teachers will support their eventual classroom knowledge-in-action? What range of initial ideas and beliefs held by prospective teachers will interact with presentations of course ideas?

The study reported here can contribute to the development of teacher educators' pedagogical content knowledge about using cases to help prospective teachers early in their program think about their images of teaching, especially with regard to issues of how subject matter and social organization figure into those images. We hope that as other teacher educators conduct inquiry into their teaching, they will provide similar detail about the ideas they are attempting to teach, the ways that their students' entering beliefs interact with the course content, and their strategies for engaging their students in examination of beliefs in light of the course ideas. As such cases of teacher education pedagogy accumulate, teacher educators will become better able to move beyond the generalities that prior knowledge and beliefs will limit what can be learned from teacher education.

Notes

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APPENDIX 1

ANALYTIC QUESTIONS

1. What characteristics should a teacher have if (s)he is to be entrusted with children? (i.e., what should a teacher be like?)
2. What are a teacher's primary responsibilities to students? (i.e., what should a teacher accomplish or make happen?)
3. What kinds of experiences are students entitled to have in schools?
4. What kind of future opportunities for children should be created as a result of schooling?
5. What is complex about teaching, and what kinds of problems might a teacher expect to encounter?
6. What must be learned in order to teach responsibly, and how will that happen?
7. What should be the nature of subject matter knowledge, and what are its origins?
8. For what purposes is subject matter to be taught and learned in school?
9. How can a teacher tell when a student has learned subject matter sufficiently well?
10. How can teachers help students gain sufficient knowledge of subject matter?
11. What kind of role is played by students in their own learning?
12. To what extent will classroom life be affected by students' lives outside of school, and what does that imply for how teachers ought to teach?
13. What kinds of student characteristics are there to be noticed? (i.e., what are students like?)
14. What does diversity among students imply for what teachers should do to teach responsibly?
15. Do entering differences in ability and intelligence determine exiting performance and knowledge?
16. What does the fact that teachers are employees of institutions have to do with the ways in which teachers carry out the duties entrusted to them?
17. What difference does it make for teachers that children are taught in groups rather than individually?
18. How might the organization of a classroom affect individual learning of both subject matter content and social, personal, and moral knowledge?

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